wherein Z is a carbon atom or R1 - B fragment

p is 1, 2 or 3

q is 3-p and

A is a counterion

 R^1 is: (i) hydrogen, aryl or aralkyl each optionally substituted with from one to five halogen or C_1 to C_6 alkyl groups; or (ii) C_1 to C_6 alkyl, C_1 to C_6 alkenyl or C_1 to C_6 alkynyl each optionally substituted with one or more halogen atoms

each L is covalently bound to Z and is independently selected from a group of the formula (II) or (III)

$$R2$$
 $R3$
 $R4$
 $R4$
 $R4$
 $R1$
 $R4$
 $R4$
 $R4$
 $R4$

in which R², R³ and R⁴ are independently selected from:

halogen, cyano, nitro, sulphono, amino, C_1 to C_6 alkylamino, C_1 to C_6 alkylamido, carboxyl, C_1 to C_6 alkyloxycarbonyl, hydroxy, C_1 to C_6

Sully Cont

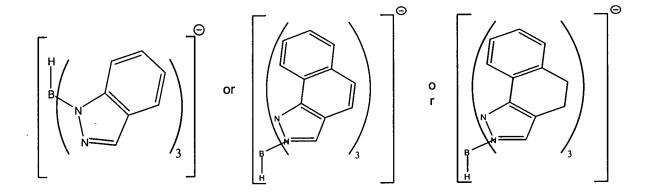
alkoxy, C_1 to C_6 alkylcarbonyloxy, C_1 to C_6 alkylcarbonyl C_1 to C_6 haloalkoxy and hydrogen;

- (ii) aryl or aralkyl each optionally substituted on the aryl ring or, for aralkyl, on the alkylene chain with from one or more of the groups mentioned under (i) above; and
- (iii) C_1 to C_6 alkyl, C_1 to C_6 alkenyl or C_1 to C_6 alkenyl or C_1 to C_6 alkynyl each optionally substituted with one or more of the groups mentioned under (i) and (ii) above;

or either R² and R³ or R⁴ and R⁴ are linked so as to form a fused aromatic or non-aromatic, ring system with the pyrazolyl ring of L; and M is a trivalent lanthanide metal ion.

- 25. A complex according to claim 24, wherein M is Tb, Ce, Eu, Er, Gd, Tm, Sm or Nd.
- 26. A complex according to claim 24, wherein Z is H-B.
- 27. A complex according to claim 24, wherein in formula II or formula III R^4 and/or R^2 is the group $-(CX_2)_nX$, where n is O or a positive integer of from 1 to 6 and X is halogen.
- 28. A complex according to claim 27, wherein X is F.
- 29. A complex according to claim 28, wherein R⁴ is trifluoromethyl.
- 30. A complex according to claim 29, wherein R² is trifluoromethyl and R³ is H.

- 31. A complex according to claim 24, wherein in formula II or formula III R⁴ and/or R² is orthodihalogenated or orthodiperhalomethylated aryl, optionally further substituted on the aryl ring.
- 32. A complex according to claim 24, wherein in formula II or formula III R² and R³ or R³ and R⁴ are linked so as to form a fused, aromatic or non-aromatic, ring system.
- 33. A complex according to claim 32, wherein ZL₃ is



34. A complex according to claim 24, wherein A is an anion selected from CF₃ SO₃, halide, nitrate and perchlorate.

- 35. A complex according to claim 24, wherein ligands ZL₃ are optionally fluorinated and are arranged about the trivalent lanthanide metal ion M such that there are no carbonhydrogen bonds within 5Å of the metal centre.
- 36. A method of preparing the organometallic complex of claim 24 comprising the steps of reacting M^{3+} ions with ZL_3^{-} ions in solution and separating the complex from the reaction mixture.
- 37. A method according to claim 36, wherein the complex is separated from the reaction mixture by solvent extraction.
- 38. A method according to claim 36, which is carried out under substantially anhydrous conditions.
- 39. A light emitting device comprising a complex as claimed in claim 24.
- 40. A device according to claim 39 which is a flat panel display.
- 41. A light emitting material comprising a film of a complex as claimed in claim 35.

- 42. A light emitting material comprising the complex of claim 35 dispersed within a matrix.
- 43. A material according to claim 42, wherein the complex comprises two ligands ZL₃ per metal ion, the said ligands being tridentate.
- 44. A material according to claim 42, wherein the complex comprises an ion of a trivalent lanthanide metal selected from Tb, Ce, Eu, Er, Gd, Tm, Sm and Nd.
- 45. A light emitting device comprising a complex containing a lanthanide metal cation complexed with from one to three polydentate ligands, wherein each ligand comprises one or more pyrazolyl groups, optionally substituted and optionally fused with a substituted or unsubstituted, heterocyclic or carbocyclic, aromatic or non-aromatic, ring system, one of the nitrogen atoms of the pyrazolyl groups forming a coordinate bond to the metal.
- 46. A device according to claim 45 wherein the ligands are trispyrazolylborate anions, the pyrazolyl groups being optionally substituted and optionally fused with a substituted